

# Spectroscope for linear multianode PMT series A10766 / A13658



## Product lineup

Item		A10766		A13658
Spectroscope	Grating type	Reflective		Transmissive
	Features	Grating selectable		High efficiency Compact size
	Detectable spectral range	300 nm to 900 nm <sup>*1</sup>		418 nm to 817 nm
	Number of channels	16 ch	32 ch	16 ch
Compatible products	PMT module type	H11459 / H11658 H12310 / H12311 H13197 / H13198	H11460 / H11659 H12176 / H12211	H11459 / H11658 H12310 / H13197
	PMT assembly type	H10515B	H7260	—

<sup>\*1</sup>: The actual detectable spectral range is determined by the combination of the selected grating and the number of PMT channels.  
For more detailed information, please refer to the next page.

# A10766

High sensitivity compact spectrometer A10766 is a polychromator that is specially designed to couple with 16 channel or 32 channel linear array multianode PMT series. The most suitable PMT assembly or PMT module is determined depending upon required dispersion and spectral width. These PMT assemblies and modules are sold separately.

## Specifications

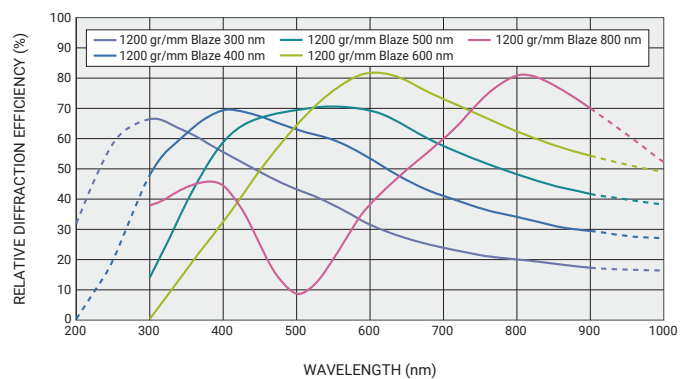
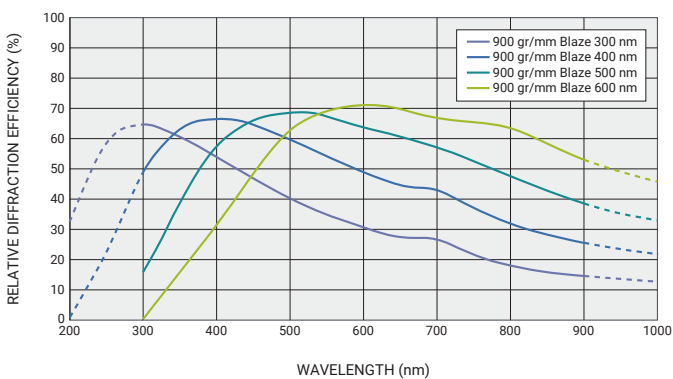
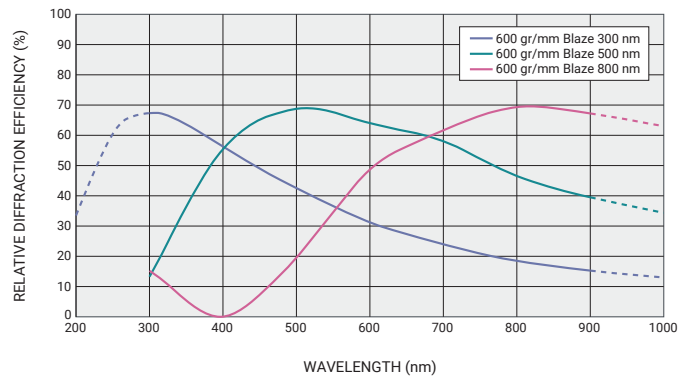
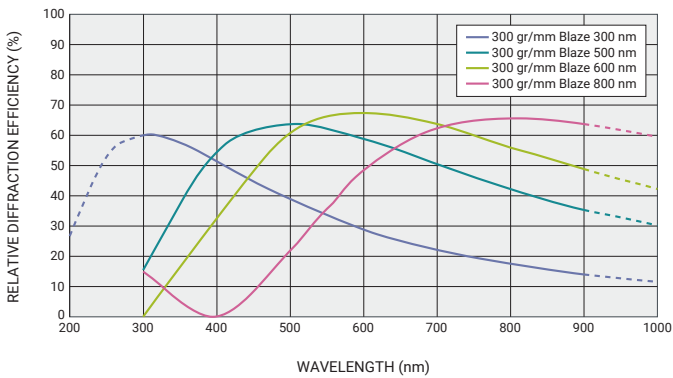
Parameter		Value								Unit	
Spectroscope A10766	Input slit size	0.7(W) x 7 (H)								mm	
	Focal length	Approx. 100									
	F value (NA)	3.3 (0.15)								—	
	Spectral range	Min.	300								nm
		Max.	900								
Grating options	Groove density	1200	900	600	300				gr/mm		
	Dispersion *1	6.3	8.7	13.6	28				nm/mm		
Compatible PMT	Channel number	16	32	16	32	16	32	16	—		
	Effective area in X-axis *2	15.8	31.8	15.8	31.8	15.8	31.8	15.8	mm		
A10766 + PMT	Spectral width / Channel	6.3		8.7		13.6		28	nm		
	Spectral range	99	197	138	275	214	428	441			

\*1: Dispersion is defined when 500 nm is adjusted at the center channel of PMT, and the value differ depending on the PMT to be combined.

The unit of dispersion is "nm/mm" that corresponds to "nm/ch" because the channel pitch of the compatible PMT is 1 mm.

\*2: PMT effective area from 1st channel to the last one.

## Grating relative diffraction efficiency curve (Reference range)



**NOTE:** Relative diffraction efficiency simulated in a Littrow mounting with unpolarized light. The diffraction efficiency can vary significantly with the polarization of incident light. These data are obtained by simulated calculation, so this information is furnished for your information only. No warranty, expressed or implied, is created by furnishing this information.

# A13658

High sensitivity compact spectrometer A13658 is a polychromator for visible range that is specially designed to couple with 16 channel linear array multianode PMT series. Since a transmission type grating is used, it has higher efficiency and more compact size, compared to A10766.

## Specifications

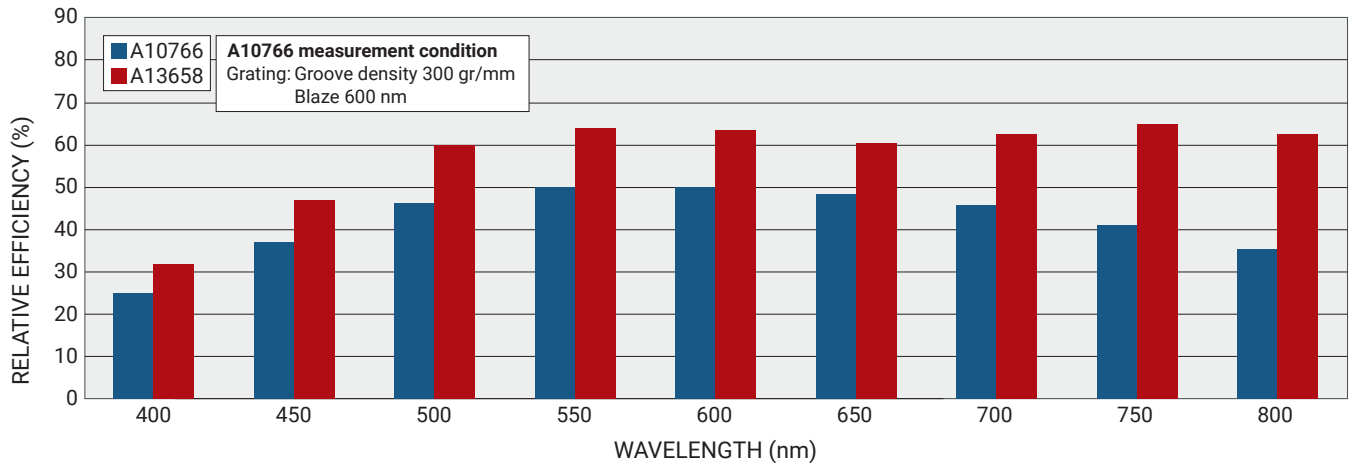
Parameter	Value	Unit
Input slit size	0.8(W) x 7 (H)	mm
Focal length	Approx. 30	mm
F value (NA)	2.5 (0.2)	—
Spectral range	418 to 817	nm
Grating	Groove density	1200
	Center wavelength	600
Dispersion*1	26	nm/mm

\*1: Dispersion is defined when 644 nm is adjusted at the center channel of PMT. The unit of dispersion is "nm/mm" that corresponds to "nm/ch" because the channel pitch of the PMT is 1 mm.

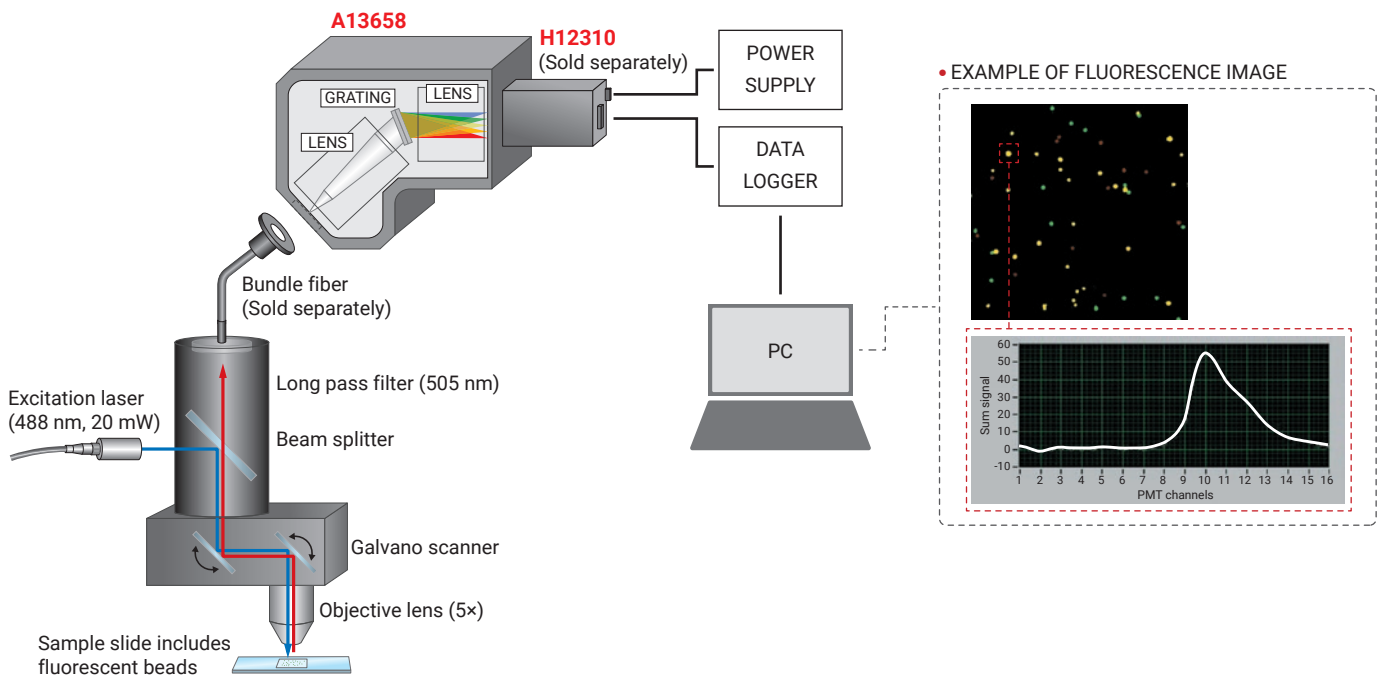
## Center wavelength of each channel

Parameter	1 ch	2 ch	3 ch	4 ch	5 ch	6 ch	7 ch	8 ch	9 ch	10 ch	11 ch	12 ch	13 ch	14 ch	15 ch	16 ch	Unit
Center wavelength	809	787	765	742	718	695	670	644	618	592	565	538	512	484	457	428	nm

## Efficiency evaluation

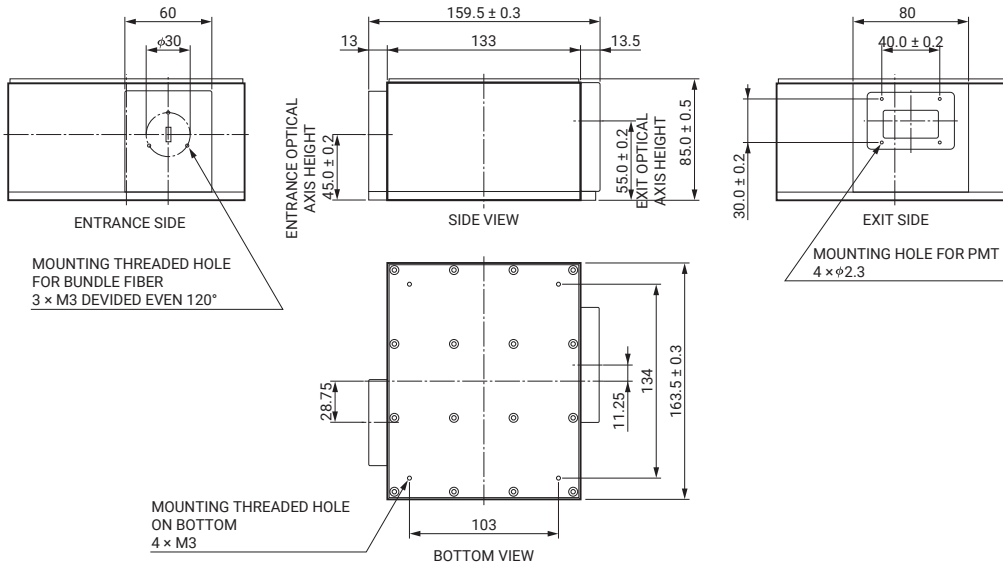


## Example of measurement diagram

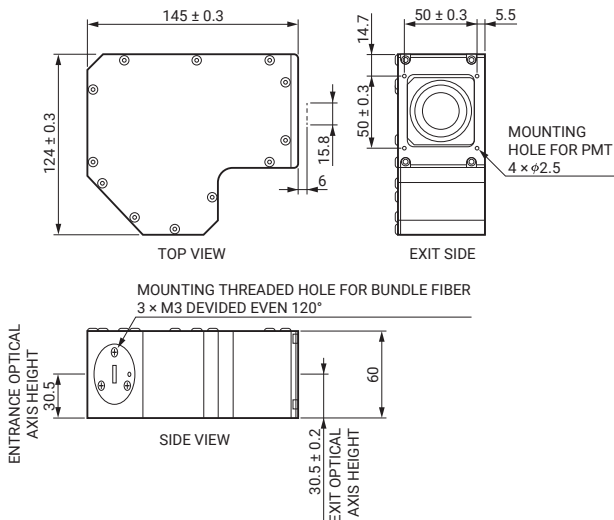


## Dimensional outline examples (Unit: mm)

### • A10766

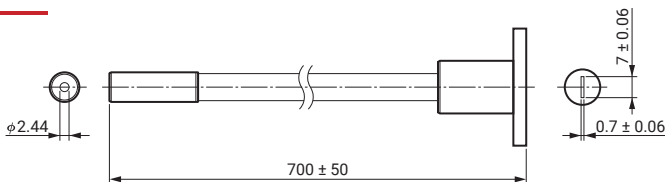


### • A13658



## Accessory (Unit: mm)

### Bundle fiber A12420 (sold separately)



Quartz, NA=0.22, 2.44 mm dia. at input side,  
0.7 mm (W) × 7.0 mm (H) at output side, 700 mm length

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